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ABSTRACT

This paper argues for the "nurture" side of the "nature versus nurture" debate of the nature of intelligence. It argues for the theory of multiple intelligences in relation to sociocultural and cognitive perspectives of second language learning. A brief historical overview of intelligence is presented, and classroom practices that lead to opportunities for successful learning experiences for limited English proficient students at the elementary school level are provided. Two appendices, "Informal Inventory of Multiple Intelligences" and "ESOL-Related Language and Content Area Needs across the Intelligences," are included. (Contains 35 references.) (KFT)

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APPLICATION OF THE THEORY OF MULTIPLE INTELLIGENCES TO SECOND LANGUAGE LEARNERS IN CLASSROOM SITUATIONS

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Application of the Theory of Multiple Intelligences to Second Language Learners in Classroom Situations

Schools in the United States are increasingly populated by students whose home language is other than English. According to the 1990 U.S. census, the fastest growing language minority group is people of Hispanic origin with 22,354,059 making up approximately 9% of the total population in the United States. The School Enrollment Social and Economic Characteristics of Students Update, revealed that, among students enrolled in elementary and high school, 14.3% were Hispanic. Interestingly, about 19.8% of all elementary and high school students enrolled in our schools have at least one foreign born parent, while 4.9% of the students are themselves foreign born (Census Bureau, 1998).

Schools must prepare teachers to work not only with the cultural realities of the children, but also the linguistic barriers that emerge due to the incompatibility between the home language and the language of the school. Not only must the child develop communicative competencies in English but,

as a requirement for academic success, the child must also develop competencies and skills in English to master the academic subjects. Unless the individual student is in a bilingual program, subjects such as reading, mathematics, science, and social studies use English as the medium to provide instruction, making the transition from the home language to English very difficult.

In addition to language incompatibility, language minority students face many fallacies that constitute barriers to school success. According to Cardenas (1995), "...these are the perceived lack of motivation, homogeneous grouping of children, intelligence testing, the existence of a right method of teaching specific concepts, and the need for competition in classroom practice" (pp. 4-5). Additionally, the fallacy that minority cultures offer a disadvantage to children leads the school to make assignments of Hispanic children into slow groups and other group labeling based on a number of criteria including, past achievement, IQ, socialization, mobility, English-speaking ability, motivation, and the like.

One of the greatest institutional barriers to student learning in is the conceptualization of IQ as a predictable

measure of school success. In the United States, all children are expected to have their intelligence assessed during their schooling as a means of determining what kind of education they are entitled to receive, what kind of work product can be expected of them, and what kind of job and life style expectancy they will have. The nature versus nurture debate stems from the alignment with two distinct hypotheses. "The…Innatist Hypothesis of IQ which holds the belief that some people are born smarter than others and no amount of training or normal variation in the environment can alter this fact." The Environmentalist Hypothesis of IQ, on the other hand holds "…the belief that intelligence is both specific and heavily dependent on experience (Cole and Cole, 1998, p. 546).

This paper, hereon, will focus on the environmentalists' perspective offered by the theory of multiple intelligences in relation to the sociocultural and cognitive perspectives of second language learning. It presents a brief historical overview of intelligence and offers classroom practices that lead to countless opportunities for successful learning

experiences with limited English proficient students at the elementary school level.

Historically, the preoccupation with IQ can be traced to France during the late 1800s when Sir Francis Galton devised a series of informal tests to determine the mental abilities of adults by assessing their reaction to time and sensory activities (McNergney and Herbert, 1998). But, it was the work of French psychologists, Alfred Binet and Theodore Simon, that led to the development of the first tests that formed the basis for our modern intelligence tests. In 1904, the Ministry of Education of the French government commissioned Binet and Simon to devise a test to identify students who were slow and identified as having learning difficulties. The students were classified as ones that may benefit from remedial instruction that would include instructional strategies for improvement. This led to the development of a large battery of tests to measure varying cognitive skills including attention, perception, memory, numerical reasoning, and verbal comprehension (Sheffer, 1996). Convinced that intelligence development was related to age, Binet and Simon, in 1904, incorporated the "graded-age" element to their test, thus giving

birth to the mental age concept associated with intellectual development.

During the 1980s and 1990s new developments led to more intensive questioning of the definition of intelligence. Many researchers have since come to the realization that intelligence is not a single ability that influences how humans perform on all tests. Intelligence is seen as many different cognitive abilities that constitute the intellectual abilities of all humans (Gardner, 1985; Guilford, 1988; Sternburg, 1988).

Measuring students' academic success is directly linked to our conception of intelligence. Educators who believe that intelligence is fluid and can be altered by designing instruction that includes stimulating learning experiences and alternative student assessment approaches will be better able to transform the teaching and learning process into a productive model that will benefit all students, especially the increasing population of language minority students. Neuroscience research has made specific linkages between the physiology of the brain and influential environmental factors that determine how children learn, thus bringing new insights to the process of teaching and learning (Jensen, 1998; Sywester, 1995). In the context of

second language learning, aptitude is considered in terms of the learners' ability to perceive patterns, remember lexical items, analyze grammatical structures, and other formal skills. However, in learning settings where communicative competencies are emphasized, affect is considered central to learning, a large degree of flexibility is permitted, and cognitive development is supported; aptitude becomes less significant because the stimulation and enrichment of the learning environment allow the learner to succeed beyond expectations.

Multiple Intelligence Theory

According to Gardner "...intelligence refers to the human ability to solve problems or to make something that is valued in one or more cultures. As long as we can find a culture that values an ability to solve a problem or create a product in a particular way, then I would strongly consider whether that ability should be considered an intelligence" (Checkley, 1997. p.8).

Gardner holds that there are many ways of being intelligence. Central to this perspective is the premise that all

individuals possess multiple intelligences that include, at least, eight different types of abilities or capacities that when allowed to flourish, leads to school success. Among the intelligences are: *Linguistic Intelligence*, the written and oral capacity to use language efficiently to express feelings and understand other people; *Logical-Mathematical* Intelligence, the capacity to understand, use and manipulate numbers, quantities, and operations efficiently; *Naturalist Intelligence*, the capacity to discriminate among living things and the sensitivity to creatures of the natural world; *Spatial Intelligence*, the ability to perceive and represent the visual and spatial world; *Bodily Kinesthetic Intelligence*, the capacity to utilize the entire body or parts of the body to express ideas and feelings to solve problems. *Musical Intelligence*, the capacity to perceive musical patterns and forms by hearing, recognizing, remembering, and performing them; *Intrapersonal Intelligence*, the capacity to perceive and express musical patterns and forms by hearing, recognizing, remembering, and performing them; and *Interpersonal Intelligence*, the ability to understand the feelings, intentions, motives of other people.

In analyzing the intelligences, Gardner suggests that not only do all humans have multiple intelligences, but we have different strengths in each intelligence area which make each individual uniquely different from each other. This also accounts for our individual differences and personality. Most people, however, can develop each intelligence at a moderate to high level of ability when given the opportunity to learn in an enriched environment. Additionally, all the intelligences work together in a complex manner just as the functions of the brain work collectively when stimulated by multisensory learning activities. Even though the brain is divided into hemispheres with distinct functions, new research suggests that the functions of both hemispheres work together in a complementary manner, thus supporting holistic and integrated activities (Jensen, 1998). Finally, there are many ways of being intelligent within each of the intelligences. An individual, who demonstrates linguistic abilities and who is determined to be intelligent in an area, may demonstrate these abilities in some aspects of language rather than others.

The Learner within the Context of the Multiple Intelligence Classroom

The MI classroom offers a holistic, integrated, stimulating, multimodal, and cooperative learning environment for all children. It also embraces non traditional approaches that allow children to utilize various modes of constructing meaning. In the MI classroom, LEP children are able to interact with other children in small social groups as they learn together and work on projects. As the LEP and monolingual students share information, they can make use of the rich contextual clues that exist within their immediate surroundings to support the communication and give a better understanding of what is being said. The learner-centered activities in the MI classroom offer facial expressions to support meaning during group interaction, to exercise personal functions such as making choices and acting upon areas of responsibilities, to inform others and ask questions, as well as for creative expressions.

The multiple intelligence classroom may use one of three distinct approaches. The lesson design in which the intelligences are infused into the lesson content, provide opportunities for the LEP student to use some or all of the

intelligences through specifically assigned activities for language development. This can be accomplished both individually and in small groups. It should also provide activities that correlate with language-specific experiences as the students visit the learning centers. In this approach, the student exercises a choice of intelligence that emphasizes specific strengths for acquiring language and developing content area skills.

The interdisciplinary approach stresses the use of units to integrate the various disciplines with a main focus through a specific intelligence area. The teacher plans with other colleagues to develop a menu of appropriate language strategies and secures resources for each intelligence. The students immerse themselves into the intelligence areas as they develop essential second language concepts and skills. The student project approach offers complex projects that are initiated and managed by the students for self-directed learning that draws from each of the intelligences. The teacher facilitates learning by providing guidance in the selection of topics, establishing time lines for the activity, providing opportunities for field experience, and other activities related to

the use of authentic language. Additionally, the teacher coaches students during the project by formulating questions that may lead to expanded use of language as problems are solved and new decisions about the projects are made. The students manage their projects by utilizing appropriate language to set goals, communicate needs, assess progress, and report the results.

A direct correlation between the structure of the classroom for MI learning and the expectations for both teachers and students must be clearly established. The structure of the classroom must take into account the developmental level of the student and as the teacher becomes more learner-centered, greater flexibility in planning also becomes important. As the students exercise their ability to make choices and make changes to develop and discover new ways of learning through the various intelligences, the teacher's role changes to one of facilitator of learning. The teacher plans, gathers resources, and provides a menu of strategies for the various intelligences that the students can utilize. Careful consideration is given to ESOL specific strategies that help to

develop language acquisition competencies as well as language that is appropriate to learn concepts in the content area.

Sociocultural Aspect of Second Language Learning

Children acquire a second language in socially stimulating environments where freedom and flexibility to interact and meet a wide variety of needs are fostered. The social and interactive nature of language is an integral aspect of language acquisition that allows the learners to evolve as they collaborate and negotiate meaning, problem solve, and think critically (Freeman and Freeman, 1992; Cummins, 1989).

Language must emerge and evolve holistically in an interactive classroom where children are encouraged to become both consumers and producers of language. As both consumers and producers of language, children learn the art of using language for different communicative purposes (Crawford, 1993; Shrum and Glisan, 1994). In the learner-centered ESOL classroom learning community, children learn in a relaxed, non threatening environment in which language evolves through games, play activities, and teacher directed learning that is rich in contextual clues and strategies for instructional support. The

classroom teacher engineers and provides multiple opportunities each day for children to receive comprehensible input for language to emerge, as well multiple opportunities to communicate with other individuals so that language can evolve and become an ongoing process.

Perhaps the greatest hindrance to second language learning in the classroom is the baggage that students bear as a result of the perceptions created by stereotypical labeling and grouping. Institutionalized structures such as low ability groups in reading and math, segregated English as a second language classes, segregated varying exceptionalities groupings, and other similar groupings create hostility resulting in social and psychological distance among groups of learners. Such distance negatively influences the social interaction and collaborative benefits that children derive from an appropriate learning environment. Current research supports the notion that in schools, where similar segregated structures are utilized, the relationships among ethnic groups are seriously affected and feelings of hostility among the groups prevail (Ogbu, 1993; Manucci and Olsen, 1992; Lampe, 1988). The feelings caused by these stereotypes generally lead the individual to react to

their perceptions of reality, rather than the reality itself, leading to greater alienation and separation of learners by race, ethnicity, and class (Adler 1993).

In practice, multiple intelligence theory is inclusive of all learners, regardless of academic, cultural, social, and linguistic labeling. Two major implications of multiple intelligences for second language learners are: 1) classroom teachers can improve learning outcomes by making modifications that include the intelligences in whatever approaches are selected for the teaching and learning process; and 2) an enriched, multimodal, caring, and stimulating learning environment in which children work collaboratively across all boundaries to construct and reconstruct knowledge will foster positive group interdependence.

Second Language Proficiency and Academic Development

Current trends in second language instruction focus on the teaching of language through academic content. The ESOL curriculum and instructional emphasis changed over the past decade, shifting the paradigm from a traditional focus on language forms and structures to a focus on the learners of

language. It has also shifted from separate instruction of language to language as an integral part of content area instruction, thus viewing the development of language and content as mutually supportive of each other. According to Ovando and Collier (1998), "Language, academic, and cognitive development all go hand in hand. As the students increase their knowledge of second language across subject area, they need to have continuing development of thinking skills" (p.166).

The research related to learning strategies and cognition for second language learners conducted by Chamot and O'Malley during the mid 1980s gave credence to the notion that when students learn how to use effective metacognitive, cognitive, and social affective strategies, an improved difference is noted in their academic achievement. According to Chamot and O'Malley (1994), "Language minority students in this and other countries have historically encountered difficulties in learning the majority language and in academic achievement" (p .4). Some of the reasons for these difficulties include inadequate curriculum, instruction, and staff development.

Language instruction that is provided separately from content area instruction tends to focus primarily on form and structures of language with very little meaningful support to assist with the difficulties and increasing demands of content area curriculum. Multiple intelligence practice fosters the use of various strengths or intelligences to maximize learning during the teaching and learning process. Because of the problem solving, critical thinking nature of the activities, coupled with the collaborative and stimulating environment that is created in the classroom, students are best able to uncover their potential for learning and extend their cognitive abilities.

Role of the Teacher in Applying MI Theory in the Second Language Classroom

The endorsement of a multiple intelligence classroom approach is linked directly with the understanding and acceptance the teacher holds of the notion that children learn in a variety of ways. By teaching major topics within a subject matter in a variety of ways, the teacher allows children to learn based on the strengths they exhibit within and across each of

the intelligences. Understanding that there are varying abilities and levels of abilities also allows the teacher to become open to a multimodal approach that allows the learner to utilize and develop all of their intelligences, thus succeeding at learning. Therefore, MI theory is inclusive of many familiar approaches such as whole language, cooperative learning, and other appropriate pedagogy that take children beyond rote learning and busywork.

The multiple intelligence classroom teacher does not necessarily teach every topic in eight different ways to match each of the intelligences. The teacher, however, recognizes that the learner must be given the opportunity to select more than one way of developing the concepts and skills related to the topic being taught, thus allowing the learner to truly maximize his/her learning capabilities by representing knowledge in other ways. Accepting the notion that there is no one best way to teach or to learn, MI theory endorses an eclectic process of teaching and learning.

The classroom teacher need not confuse MI practice with learning style. While there are similarities, there are also distinct differences that could stand in the way of developing

an effective MI classroom. Gardner emphasizes that the learning modalities that make up a child's preferred styles of learning need not be confused with the concept of MI. When educators identify the learning styles of children, they also determine that the child will learn everything by using the identified modality or a supporting modality. This is contrary to the theory of MI which supports the child's orientation to respond in varied ways to different kinds of contexts rather than, using only one way of responding to learning. Consequently, being a visual learner, for example, is not an indicator of MI rather, it is an indicator of a learner who has a high ability of spatial relationship. With this notion, the teacher should emphasize the strength of the spatial relationship to teach new concepts and maximize learning (Checkley, 1997).

The theory of multiple intelligences suggests integration of learning which goes hand-in-hand with current trends in ESOL instruction that suggests the need for language to be functional, used for authentic purposes, and emerge holistically. This implies that the ESOL curriculum has moved from a focus on form and structure of language to viewing language as a whole interrelated system. Likewise, instruction

has also moved from drills and repetitive grammatical exercises for language habit reinforcement to a focus on the content of the message that is conveyed through the interrelationship of the units of language during social interactions (Crawford, 1993; Shrum and Glisan, 1994).

Starting a multiple intelligence classroom will initially take a lot of time to plan, especially for teachers who endorse a more traditional style of teaching. A self-assessment leading to the alignment between the philosophy of the teacher with the expectations of the program is necessary. Since education has moved from the traditional, teacher-directed instruction to a more open learning environment in which students actively participate in their learning, it is expected that most teachers are growing in the same direction. Since MI theory is not prescriptive, but rather developmental, on a continuum, a teacher may fall somewhere between being less traditional but steadily moving toward the learner-centered, open learning classroom environment orientation.

The next step is to define the instructional objectives for the LEP students. These objectives should fulfill two distinct needs. They should seek to integrate both second

language instruction with content area instruction. By using a multiple intelligence approach, the teacher will provide a variety of opportunities for the second language learner to construct meaning through interactions that provide comprehensible input that in return, helps to satisfy the need to communicate with others while developing and acquiring language. The content objective focus will, on the other hand, facilitate the development of the academic language the child needs so that he or she can internalize the concepts and practice related skills in the content area for school success.

It is important that the teacher develops an informal profile of each student in the class. The profile may be developed by using a formal instrument or by simple asking informal questions or responding to statements that serve as indicators to determine specific abilities and strengths in each of the intelligences. The inventory should only serve as a tool so that adjustments may be made to optimize learning. It should assist the teacher in determining the best strategies needed for each student to learn the new materials being introduced before moving to other strategies to compliment the primary intelligence. Table #1 offers informal statements that

can be used, through direct observation, to develop a profile of the intelligences.

A clear understanding of the instructional format the teacher wishes to use should be followed by the identification of a menu that generally identifies students' needs within each of the intelligences. Initially, it might be best to plan two centers to represent at least two of the intelligences and gradually add additional centers to represent other intelligences. To give language acquisition and language for content instruction the centrality needed to benefit the second language learner, it is highly recommended that linguistic intelligence activities be on going.

Once the student profiles are developed and the classroom is organized for a variety of group activities, the teacher must be able to access a menu that includes possible activities and didactic materials for the various intelligences. Since the topics within the unit will require specific learning activities to attain the goals and objectives for the lesson, the teacher may then choose, revise or add additional strategies for the intelligences. Table #2 provides a menu of nonprescriptive learning needs and instructional materials for the LEP students

within each of the intelligences with a primary focus on linguistic intelligence as the undergirding factor to develop language acquisition and academic language for the content area across all of the intelligences.

Next, the teacher may begin the actual planning process for classroom activities. The best process should start with the goals and objectives for second language classroom instruction. By concentrating on the goals for ESOL which gives centrality to language acquisition and academic language development for the content area, the teacher may isolate one or two objectives for the lesson and begin to plan the learning activities. Armstrong (1995) suggests posing a series of MI questions for each intelligence to give helpful directions that would lead to the activities. The teacher should proceed by analyzing each of the questions posed and write as many strategies possible to support learning in each intelligence. A brainstorming session with teams of teachers or other colleagues could help to secure appropriate resources for each intelligence. Finally, the teacher should develop and implement a plan that incorporates the MI activities in the teaching and learning process for the week. By midweek and again at the

end of the week, the teacher should assess the process and make changes were necessary.

Conclusions

Creating a MI classroom or school is everybody's business. It takes the commitment of an entire community to support and ensure a meaningful and enriched education for every child. Teachers and administrators need to work collaboratively and take risks as they plan new strategies to deliver instruction. If a strategy does not work as expected, then reassess its use, make changes, and try again. Students need to have choices of strategies that best meet their learning needs. This can only be accomplished in a classroom that is enriched with a variety of possibilities to engage children in their learning. Schools must also establish partnerships with businesses and the community at large so that learning can take place well beyond the four walls of the classroom. The MI classroom provides ample opportunities for students to grow and develop to their maximum potentials.

The success of any structure for learning should be evaluated based on learner outcomes. Various forms of

alternative assessments are recommended as further deviation from the typical standardized tests. These unconventional strategies will also require unconventional assessment measures. Therefore, teachers may use a wide range of alternative assessments including, observations, journals, checklists, portfolios, student self-ratings, dialogues, and a host of other measures. Even though MI theory does not suggest changes in the curriculum, the school must still examine its overall program to ensure quality in the delivery of instruction. According to Ornstein and Hunskins (1993) by using the Provus Model or a similar model for program evaluation, the school can examine its programs against prescribed standards or criteria held by the school district, the process and activities used by teachers and students for adequacy, and the products produced by teachers and students, to determine needed program modifications to affect learner outcomes.

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Table #1
Informal Inventory of Multiple Intelligences

Through informal observations of the students, develop individual profiles of their intelligences by checking the most appropriate items below. A large number of items check under a specific intelligence will serve as an indicator of strength in the intelligence.

Linguistic Intelligence
The student truly enjoys...
___ telling jokes and stories
___ writing creatively
___ reading for information and just for fun
___ word games and puzzles

Mathematical Intelligence
The student truly enjoys...
___ measuring and calculating activities
___ manipulating quantities and computing math problems
___ games for critical thinking and analyzes
___ predicting data represented by graphs and charts

Spatial Intelligence
The student truly enjoys...
___ drawing, painting, and other art activities
___ using pictures and visual images to represent and explain information
___ working with puzzles and mazes
___ working graphics, collages, and illustrations

Bodily-Kinesthetic Intelligence
The student truly enjoys...
___ dancing and rhythmic activities
___ sports and other active game-like activities
___ touching, moving and dramatic play activities
___ activities that develop fine and gross motor

Musical Intelligence
The student truly enjoys...
___ singing, humming, and rhythms
___ keeping up the rhythm by tapping clapping, etc.
___ recalling melodies of songs
___ listening to music just for fun

Interpersonal Intelligence
The student truly enjoys...
___ being with other people
___ having many friends
___ learning in cooperative groups
___ organizing social activities and communicating with others

Intrapersonal Intelligence
The student truly enjoys...
___ working alone
___ working on activities that are of personal interests
___ having personal time for self-reflection
___ being independent and self-directed

Naturalist Intelligence
The student truly enjoys...
___ discovering and experimenting activities
___ observing and recording changes
___ taking care of living things
___ classifying and discriminating activities

Table #2

ESOL-Related Language and Content Area Needs Across the Intelligences

The Intelligence	Student Needs	Approaches/Strategies for Language Development
1. Linguistic	Ample opportunities for reading, journal and book writing, diary keeping, poetry reading and writing, debates, debates, panel discussions, and other language activities. Materials Books and book making materials, tape recorder, word processors / computers, dictionaries, thesauruses, and other language development tools.	- Make ample use of the tape recorder as a means of providing comprehensible input. Use tape recorded commands and responses for TPR activities for LEP students who are at the pre-production and early production levels of language - Use Suggestopedia, Whole Language, language experience, word-games, and play-like activities to support language acquisition and learning.
2. Logical-Mathematical	Opportunities to problem solve and think critically; explore, organize, and manipulate the physical world by using math manipulatives. Materials Blocks, unifix cubes, multilink cubes, rulers, compass, deans blocks, puzzles, calculators, and other manipulatives.	- Integrate Language and content by using specific Cognitive Academic Language Learning Approach to support word problem solving activities in mathematics. - Provide support for LEP students to understand the problem, find the needed information, choose a plan to solve the problem, and check for correct responses. - Support the use of specific CALLA strategies such as advance organizers to plan, monitor, and evaluate comprehension of the problem, selective attention to focus on the word cues needed for concept clarity, use of prior knowledge to connect both the old and the new information to solve the problem, and the use of imagery and manipulatives to clarify understanding to solve the problem.
3. Spatial	Opportunities to design, draw, experiment with colors, explore and illustrate spatial relationships via mental pictures, puzzles, maze, etc. Materials Paints, modeling clay, brushes, markers, glue, drawing and construction paper, color pencils, calligraphy kits, magazines, sewing and weaving materials, easels, etc.	- Use imagery to support varied forms of language expressions across other intelligences. - Support activities that build murals, large and small displays of spatial concepts that reinforce learning in all the subject areas across curriculum disciplines.
4. Bodily Kinesthetic	Offer opportunities to participate in sports, drama, play and games, creative and cultural dance and exercise, gymnastics, martial arts, and other activities that encourages body movements. Materials Curricular and extracurricular	- Use the body as a form of physical expression to support learning activities across the curriculum and across intelligences. - Plan and incorporate "hands-on" learning activities such as: dramatic bodily expressions to support the science unit on vegetables, or the mathematical concept of even numbers with a focus on content specific language usage.

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The Intelligence	Student Needs	Approaches/Strategies for Language Development
	planned activities that encourages the development and coordinated use of the body.	
5. Musical	Opportunities to experiment with rhythm and tonal patterns; rudimentary and non-rudimentary music instruments; participate in music performances, solo and choral singing and other related expressions. Materials A variety of musical instruments, tape recorders, video, cameras, records, sound proof practice rooms with many opportunities for practice and compose music.	- Use music to develop language expressions that incorporate content language as well as opportunities to acquire language. Use rhythm for bodily-kinesthetic activities to support learning activities across the curriculum and across intelligences. - Plan and incorporate music and singing activities to support the concepts for science, social studies, or mathematics while maintaining a focus on content specific language usage.
6. Interpersonal	Opportunities to assume leadership by planning and directing activities cooperatively with others, including dramatic plays, hosting activities, and sharing ideas publicly. Materials Space and time to work with others.	- Focus on cooperative learning strategies as a way of work, and plan and incorporate content activities with a focus on language development.
7. Intrapersonal	Opportunities for self-reflection and planning, and personal space for individual work. Materials Planners, diaries, personal space, and other self-reflective materials such as materials for personal growth, affirmation and independent study.	-Focus on specific individual needs that can be satisfied on a one-on-one basis. - Plan and incorporate language specific content areas activities that will meet the individual needs of the LEP student while working at an individual desk or at a learning center. Note: The child also needs to develop and use cooperative learning skills that build upon the strength of reflective thinking and introspection.
8. Naturalist	Opportunities to pose questions, investigate, discover and examine things using the scientific approach. Materials Magnifying glass, telescopes, microscopes, beakers, test tubes, yard space to grow things, classroom pets to care, and a host of other science related materials.	- Integrate language and content through the use of the scientific method using CALLA strategies. - Provide support for LEP students to use appropriate language to ask questions and identify the problem, formulate the hypotheses, collect and record data, and answer questions to solve the problem. - Provide support for the use of CALLA strategies such as advance organizers to plan, monitor, and evaluate comprehension of the problem; selective attention to make sure focus is placed on specific information and language needed for understanding; devising a note-taking approach to summarize, grouping and classifying the data; and so on..

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